

WHAT IS CLAIMED IS:

1. A method of minimizing contamination of optical components of a laser, the components being located in a gaseous atmosphere within an enclosure, the gaseous atmosphere capable of containing contaminants including water vapor, organic vapor, and suspended particulate matter, the method comprising the steps of:
  - (i) extracting gas from the atmosphere within the enclosure;
  - (ii) passing the extracted gas through a first medium selected to reduce the water vapor content thereof;
  - (iii) following step (ii), passing the extracted gas through a second medium selected to reduce the water vapor content thereof;
  - (iv) following step (iii) passing the extracted gas through a filter selected to reduce the particulate matter content thereof;
  - (v) following step (iv), returning the extracted gas to the enclosure.
- 15 2. The method of claim 1, wherein said first media is silica gel.
3. The method of claim 1, wherein said second medium is activated carbon.
- 20 4. The method of claim 1, wherein said second medium is a molecular sieve.
5. The method of claim 1 wherein said filter is a HEPA filter.
- 25 6. A laser, comprising:  
an enclosure;  
a plurality of optical components located in a gaseous atmosphere within said enclosure;  
a gas conditioning arrangement including a desiccant medium, a medium for trapping organic vapors, and a filter for trapping particulate matter;

a pump, said pump in fluid communication with said enclosure via a first conduit and in fluid communication with gas conditioning arrangement via a second conduit and said gas conditioning arrangement being in fluid communication with said enclosure via a third conduit;

5           said pump being arranged to extract gas from said enclosure via said first conduit and deliver said extracted gas to said gas-conditioning arrangement via said second conduit; and

10           said gas conditioning arrangement being configured such that said extracted air delivered thereto by said pump passes, in sequence, through said desiccant medium, said organic vapor trapping medium, and said filter and is then returned to said enclosure via said third conduit.

7.       The laser of claim 6, wherein said desiccant medium is silica gel.

15       8.       The laser of claim 6, wherein said organic vapor trapping medium is activated carbon.

9.       The laser of claim 6, wherein said organic vapor trapping medium is a molecular sieve.

20       10.      The laser of claim 6, wherein said filter is a HEPA filter.

11.      The laser of claim 6, further including fourth and fifth conduits and first and second valves, said fourth and fifth conduits and said valves arranged such that a drying gas can be passed through said desiccant medium for regenerating the desiccant medium while preventing said drying gas from entering said enclosure.

12. A purging apparatus for a laser, the laser including a plurality of optical components located in a gaseous atmosphere within an enclosure, the apparatus comprising:

a gas conditioning arrangement including a desiccant medium, a medium for trapping organic vapors, and a filter for trapping particulate matter;

5 a pump, said pump being arranged to extract gas from said enclosure and deliver said extracted gas to said gas-conditioning arrangement via said second conduit; and

10 said gas conditioning arrangement being configured such that said extracted air delivered thereto by said pump passes, in sequence, through said desiccant medium, said organic vapor trapping medium, and said filter and is then returned to said enclosure.

13. The laser of claim 12, wherein said desiccant medium is silica gel.

15 14. The laser of claim 12, wherein said organic vapor trapping medium is activated carbon.

16. The laser of claim 12, wherein said organic vapor trapping medium is a molecular sieve.

20 17. The purging apparatus of claim 12, further including first and second valves, said first and second valves arranged such that a drying gas may be circulated through said desiccant medium for regenerating said desiccant medium while preventing said drying gas from reaching said enclosure.

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